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SOVIET CONFERENCE ON GAS PURIFICATION

At the end of 1949 a scientific and technical conference on gas purification was held at Leningrad by the Administration of the Leningrad Division and the Gas Purification Committee of VNITOE (All-Union Scientific and Technical Society of Power Engineering).

Thirteen reports were read and as a result of the discussion which followed, a number of decisions were taken; the most important are described below.

The conference gave the highest priority to the development by commissions of the Sanitary Institute imeni Erisman of temporary standards, made up of ten components, for maximum permissible concentrations of contaminating noxious substances in the atmosphere of populated areas.

Priority was also given to the following projects:

1. The rapid development of formulas to permit the conversion of maximum permissible concentrations of contaminating substances in populated areas into similar concentrations of gases expelled from chimneys, and the establishment of a standard for the maximum discharge of such concentrations.

2. The development by responsible institutes of methods for the rapid analysis of impurities in the air, and the construction of portable instruments for use beyond the effective range of purifying equipment where the standards of maximum permissible concentrations of noxious substances established by the Institute imeni Erisman are exceeded.

It was pointed out that in recent years domestic techniques in the field of dust elimination have achieved great successes, but that the dust precipitators themselves still require considerably improvement, which entails additional research work.

A new type of Cottrell filter with a graded process of ionization and precipitation has been developed and introduced for fine gas purification. A new cell design has been developed for battery-driven dust extractors of 250, 150 and 100 mm to give them maximum efficiency for their size. It was recommended

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that the new type of cell should be introduced in all cases where battery-driven dust extractors are being used. Complementary research is required to establish the most efficient cell grouping in battery driven extractors.

Where single dust extractors are installed, the NIIOGAZ (Scientific Research Institute of Gas Purification) type is recommended, as experiments have shown it to be the most efficient in existence. The diameter of this type of extractor should not normally exceed 0.8 m and at the very most, 1 m. These dust extractors are now being tested under industrial conditions.

It was recognized that the VTI (All-Union Thermotechnical Institute) shutter-type dust purifier with a horizontal grid has a number of high qualities such as good grouping, low weight, small size and a comparatively low resistance. However, a better constructional form of dust purifier is that with a circular conical-shaped shutter-type grid giving compactness, low metal content, and high efficiency.

The VTI centrifugal gas purifier, which is easily built and highly efficient, is suitable for use on fuels with low sulfur content and where hydraulic dust extraction is employed. According to data supplied by the TsKTI (Central Committee of the Thermotechnical Institute) their experimental tubular dust extractor with a water envelope is a highly efficient machine with low hydraulic resistance and water consumption.

The conference noted that NIIOGAZ has developed a new design principle for hose [sleeve?] filters and that Glavtsvetmet (Main Administration for Nonferrous Metals) has introduced a number of constructional improvements for these devices. It was considered that responsible research institutes should proceed with further research and industrial experimentation on these filters.

Attention was next drawn to the necessity for preventing the accidental explosion of all types of dry dust extractors where they are installed. Recommendations regarding gas and air purification in the metallurgical industry also were adopted.

NIIOGAZ, TsKTI, VTI, VINOT [All-Union Research Institute of Purification Technology?], and the Institute imeni Erisman must develop a mutual program for research and testing to improve the design of new types of Soviet dust-purification equipment.

The conference noted that at present, gas purification from sulfur dioxide is mainly carried out by the ammonium method. A pilot plant should be installed in every electric power station so that this method may be improved and others developed. Sulfur-purification problems must be solved jointly by the Ministry of the Chemical Industry and the Ministry of Electric Power Stations.

The conference also took note of a number of organizational measures concerning the general arrangements for research work on gas purification, the production, delivery and installation of gas-purification equipment, and other related questions.

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